DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-028137
Date Inspected: 09-Aug-2012

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1930
Location: Job Site

CWI Name:	Julian Razo			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS OBG

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At OBG 13W-PP122.2-LS1 deck stiffener flange inside, QA randomly observed ABF/JV qualified welder Jose Torres continuing to perform PJP groove welding root pass to fill pass on the deck stiffener flange T-joint. The welder was observed perform manual welding in the 4G (overhead) position utilizing a Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E9018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1162-4. The stiffener flange plate has a bevel groove being welded PJP T-joint to the longitudinal stiffener. The plates were preheated to more than 200 degree Fahrenheit using Miller Proheat 35 Induction Heating System. During welding, ABF Quality Control (QC) Julian Razo was noted monitoring the welding parameters of the welder with measured working current of 125 amperes on the 3. 2mm E9018H4R. During the shift, cover pass welding was completed and the welder held the same preheat of >200 degree Fahrenheit for three hours after welding as required.

The welder has moved to the other stiffener flange 13W-PP122.2-LS2 after the three (3) hour post weld heat treatment (PWHT) of the welded PJP T-joint. The welder has moved the heater blanket and when the required preheat was attained, the welder started welding the root pass. At the end of the shift, root pass welding was still continuing and should remain tomorrow.

At OBG location 14W-PP124.65-W3 longitudinal diaphragm reinforcing stiffener inside, this QA randomly

observed ABF welder Lin E. Yun perform Partial Joint Penetration (PJP) welding on 18mm thick stiffener plate to 18mm thick connection plate. The welder was noted welding in 1G (flat) position and fillet welding using Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018 H4R electrode implementing Welding Procedure Specification (WPS) ABF-WPS -D15-1160 and ABF-WPS-D15-F1200A. The horizontal stiffener being welded to the connection plate has a 45° bevel that is T-joint connected to the multiple drilled holes connection plate. The fit up was previously checked by ABF QC Julian Razo and randomly verified by this QA. During welding, the welder was noted preheating the plates to more than 150°F using propylene gas torch prior welding. ABF QC Julian Razo was noted monitoring the welding parameters with measured working current of 125 amperes during welding. During the shift, PJP on one side and fillet welding on the other side on four connection plate stiffeners were completed.

After the completion of the PJP and fillet welding on connection plate stiffener mentioned above, the welder has moved to another location and performed first time repair welding on drop-in floor beam. The welder was observed perform 1G SMAW welding repair on 13W-PP123-W2.8 BF1 floor beam flange butt joint. Prior welding, another welder has excavated the UT detected defect and ABF QC Julian Razo performed the Magnetic Particle Testing (MT) on the removal of the defect. The repair excavation was located at Y=270mm and was having excavation dimensions of 70mm long X 25mm wide X 15mm deep. The welder was noted using SMAW with 3. 2mm E7018H4R electrode implementing Caltrans approved ABF-WPS-D15-1001-Repair. Repair welding on the beam flange mentioned above was completed.

At OBG 13W-WK-WP1 K-plate inside, QA randomly observed ABF/JV qualified welder Chau Tran continuing to perform CJP groove welding fill pass on the K plate butt joint. The welder was noted manual welding in the 3G (vertical) position utilizing a Shielded Metal Arc Welding (SMAW) with 3.2mm diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1040C Rev.1. The plates were preheated to more than 150 degree Fahrenheit using propylene gas torch prior welding. During welding, ABF Quality Control (QC) Julian Razo was noted monitoring the welding parameters of the welder with measured working current of 123 amperes. At the end of the shift, fill pass welding was still continuing and should remain tomorrow.

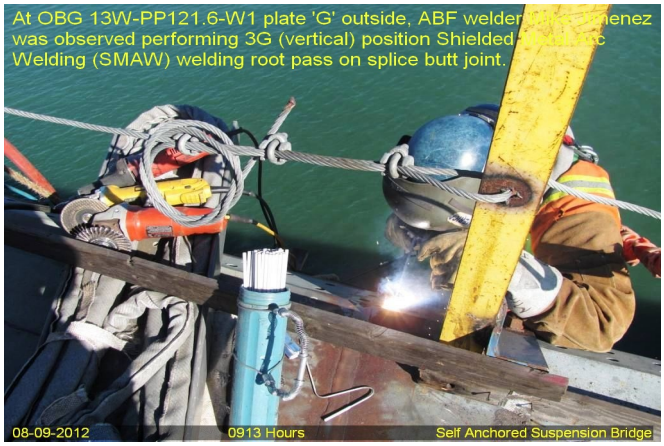
At OBG 13W-W2.8@12570 drop-in top deck plate inside, QA randomly observed ABF/JV qualified welder Richard Garcia continuing to perform CJP groove welding repair from location Y=9250mm to Y=10150mm. The welder was observed manually welding in the 4G (overhead) position utilizing dual shielded Flux Cored Arc Welding (FCAW-G) with 1.6mm diameter electrode implementing Caltrans approved welding procedure ABF-WPS-D15-3110-4. This repair has been excavated and being welded with Caltrans approved Request for Weld Repair (RWR) #201208-001. The repair excavation was preheated to more than 225 degree Fahrenheit using Miller Proheat 35 Induction Heating System with the heater blanket put in plate on top of the deck prior/during welding. During the shift, ABF QC Julian Razo was noted monitoring the welder with measured working current of 260 amperes, 22.5 volts. The welder performed the FCAW-G repair until the end of the shift wherein he partially completed the repair welding. The welder held the same preheat and held it for three (3) hours after welding as required.

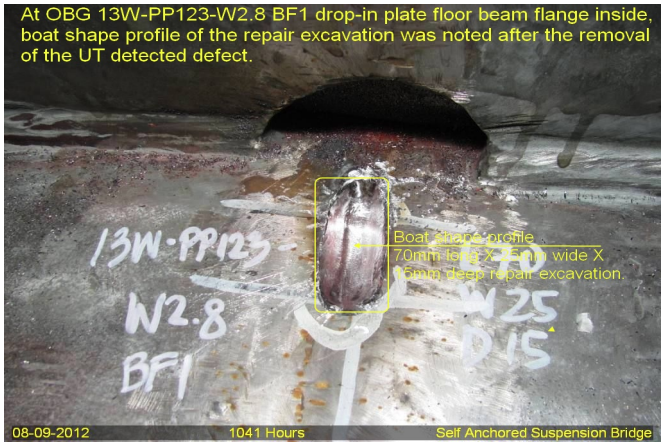
At OBG 13W-PP121.6 plate ‘G’ inside, QA randomly observed ABF/JV qualified welder Mike Jimenez perform root pass to fill pass welding on the Complete Joint Penetration (CJP) splice butt joint. The welder was observed manually welding in the 3G (vertical) position utilizing a Shielded Metal Arc Welding (SMAW) with 1/8”

diameter E7018H4R electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-1040A Rev.1. The joint being welded has a single V-groove butt joint with ceramic backing bar that will be removed and back gouged. ABF QC Julian Razo performed the fit up check and noted 1mm misalignment and 13mm root opening. This QA verified the fit up and noted the same. During the shift, the welder has completed the root pass to cover pass on one side then moved underneath and removed the ceramic backing then performed back gouging using carbon air arc gouging. ABF QC Julian Razo was noted performing Magnetic Particle Testing (MT) on the back gouged and smoothly ground the surface with no relevant indication noted. The welder resumed welding the splice butt joint at overhead position until the end of the shift.

At the request of Quality Control Field Supervisor, Bonifacio Daquinag, QA has randomly verified the QC VT/MT on the fillet welding stiffener plates. The QA verification was performed to verify that the welding and the VT/MT inspection performed by the QC inspector meet the requirements of the contract documents. At the conclusion of the QA verification it appeared that the weld and the QC inspection complied with the contract documents.

1. 13W-PP122.65-W3 (RSA & RSB) – longitudinal diaphragm (LD) stiffener fillet weld cover QA verified.
2. 13W-PP121.35-W3 (RSA & RSB) – longitudinal diaphragm (LD) stiffener fillet weld cover QA verified.





Summary of Conversations:

No significant conversation ocurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer